

# ***Innovations and Improvements in Cost Information Management***

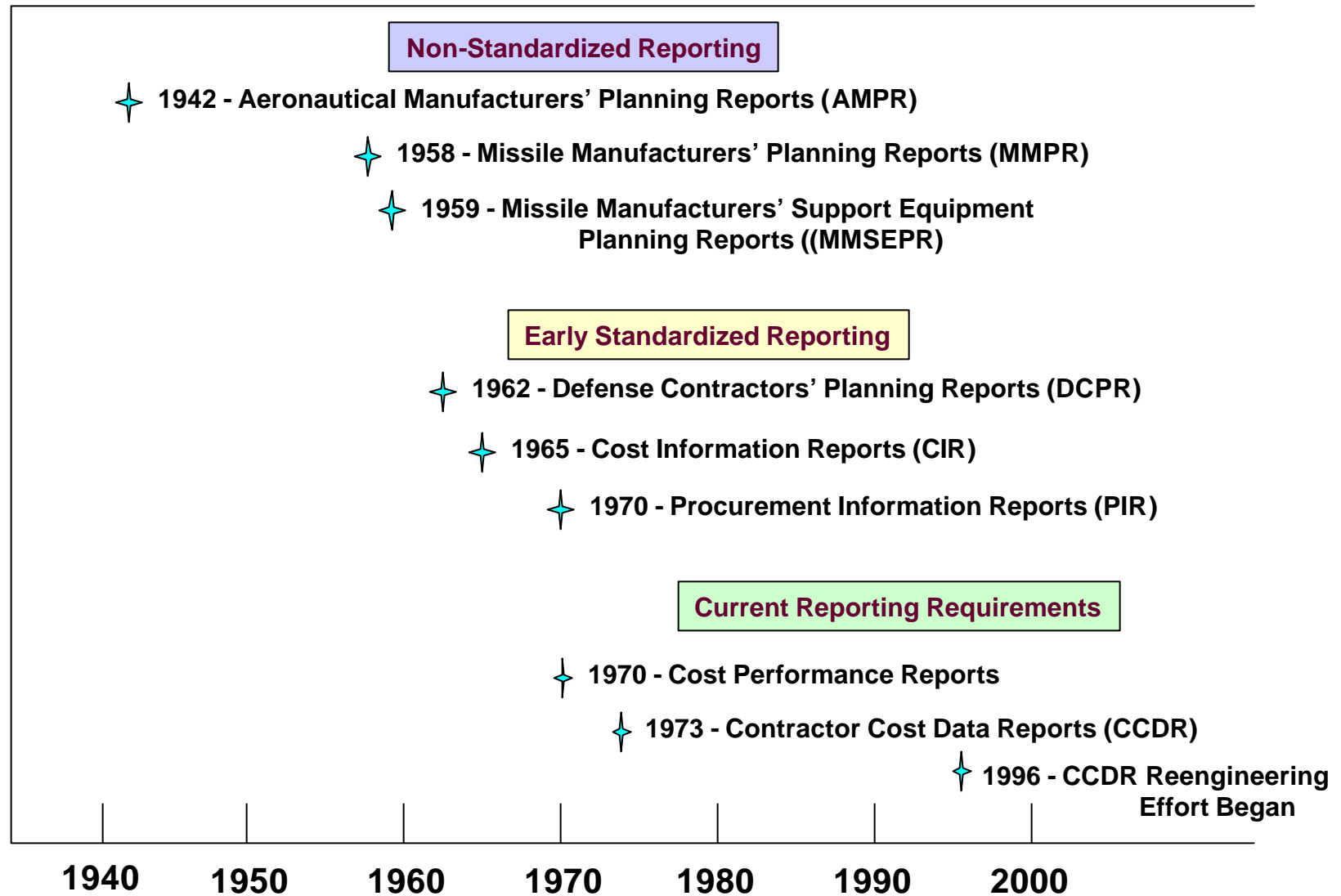
Weapon System Cost Reporting  
in the  
U.S. Department of Defense

Contractor Cost Data Reporting Project Office  
**[dacims.pae.osd.mil](http://dacims.pae.osd.mil)**  
(703) 602-3301

*“Knowledge is like money: to be of value it must circulate, and in circulating it can increase in quantity and, hopefully, in value.”*

*Louis L'Amour*

# History of DoD Cost Reporting Systems



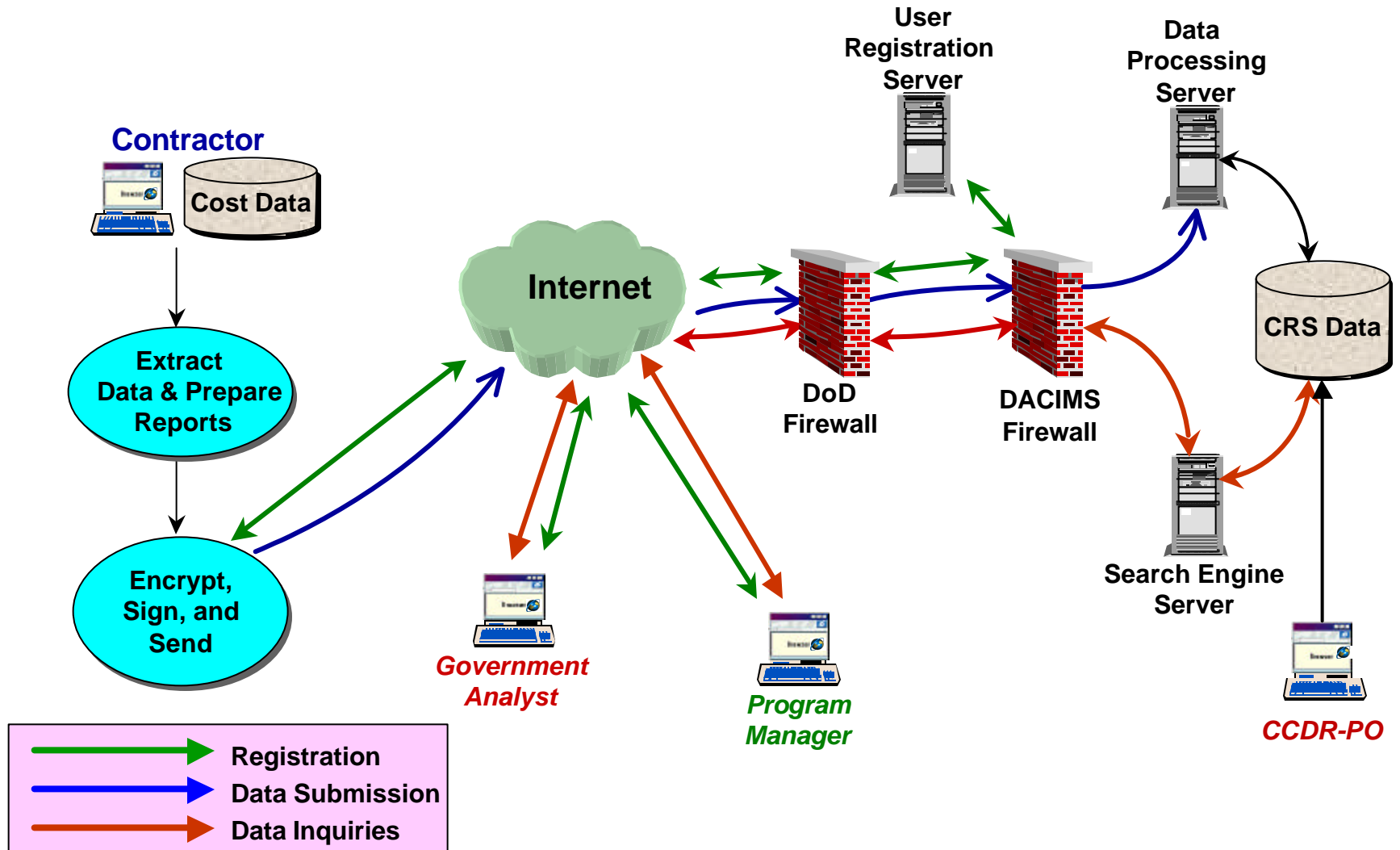
# *Value Added from Cost Reporting*

- Provides cost estimators with actual historical data
  - Useful in developing cost estimating relationships (CERs), databases, etc.
- Standardized information across program types
  - Recurring/non-recurring split by Work Breakdown Structure Element
- Data from contractors is only source for actual cost data
- Allows the CWIPT to monitor, forecast, and estimate future program and contract costs
- Different uses than EVM reports

# *Contractor Cost Data Reports (CCDR)*

- Early 1970s - The Promise
  - Standardized independent source of data for OSD cost estimates
- Early 1990s - The Squalor
  - 30,000 CCDR reports moldering in file cabinets in the basement of the Pentagon
  - Hard to use, and little used
- 1996 - Reengineering
  - CCDR Project Office established
  - Provide old data electronically over the web
  - Collect and disseminate new CCDRs over the Internet
  - Streamline and reduce burden where possible

# CCDR Repository System Data Flow



# *Before and After Re-engineering*



36,000 Paper Records



Fully Automated, Content  
Searchable Database

## *CCDR's Available*

Category	Reports in System
Aircraft Systems	15694
Missile Systems	13177
Electrical/Automatic Software Systems	4500
Space Systems	875
Ordnance Systems	522
Surface Vehicle Systems	369
Ship Systems	92
Other reports being processed	1520
Grand Total	36749

# *Accomplishments To-Date*

- Phase-1 of secure on-line system operational
  - All historic hard-copy CCDR reports now in electronic form
- Public Web Site includes guidance and instruction:
  - CCDR Manual
  - Training material (powerpoint & video)
  - Software tools and formats
- Streamlined and reduced number of cost reports
  - electronic formats further reduce burden
- Security standards improved for contractor proprietary data
  - developed in partnership with industry

# *On-Going CCDR Programs*

- Validation
  - Ensuring quality data with every CCDR submittal
  - No mathematical errors, No logical inconsistencies
- Training
  - Off-site training for government analysts, industry representatives, and program management personnel
- Improving CCDR functions
  - Automating CCDR plans, compliance tracking
- Data Collection
  - Collecting data from 42 active programs
  - Developing plans for 22 other major acquisition programs
- Industry Relations
  - Vetting cost reporting issues with senior officials
  - Government/Industry Focus Group made significant contribution to process

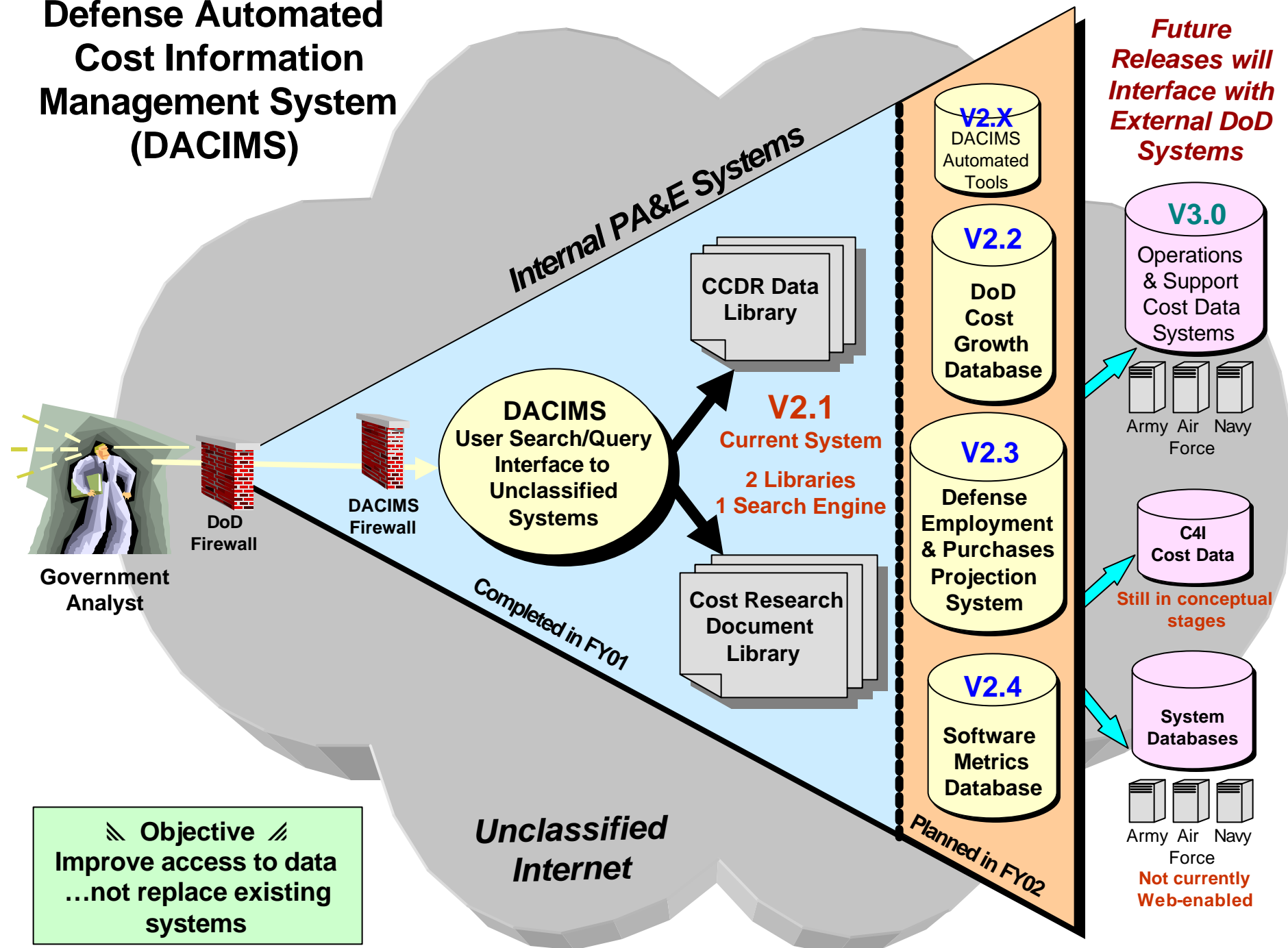
# *The Vision...*

Become **THE** comprehensive, readily usable, secure, high quality source of weapon system cost information for DoD

- Steps Completed
  - Improved web sites (public and secure)
  - Transferred control of other related activities
    - » Cost Analysis Improvement Group (CAIG) Library, DoD Cost Growth Database, Software Metrics Initiative, & Defense Employment and Purchases Projection System (DEPPS)
  - Developed Cost Research Document Retrieval System
- Steps initiated
  - Exploring electronic interfaces with O&S data systems
  - C<sub>3</sub>I-mandated IT system security accreditation
  - Integrating other activities (above) into on-line system

DACIMS will be a one-stop shop for cost analysts

# Defense Automated Cost Information Management System (DACIMS)



# *Tools You Can Use*

- Automated CCDR Validator
  - Reduces effort and increases accuracy of numeric CCDR validation
- Data Availability Matrix
  - Will point user to other sources of data not available in DACIMS
- Cost Growth Database
  - Allows users to track program cost growth over time
- DEPPS
  - Gives industry information about long-term defense spending plans
  - Used to analyze "defense in the economy" issues
- Inflation conversion tool
  - Allows users to consistently convert "types" of \$ to other "types" of \$
  - Implements economically correct methodology of converting "types" of \$
- Program Cost Report Plan Database
  - Will provide the ability to proactively manage and track a program's cost reporting requirements

*Software Measurement Data Collection  
Proposal  
A Status Report*

Thomas J. Coonce  
January 2002

# *Background*

- Software is a cost driver on many defense systems and cost estimating community has little historical data upon which to base future estimates
  - Software data is consistently “red” in DoD Cost Research Symposium results
- DoD cost analysis organizations, collaborating with industry, have developed a proposal to collect a small, but key set of measures
- Goal to help estimators of new systems by providing experiences from current ones

# Software Measurement Proposal Overview

- Objective: Collect key software measures on DoD elements to improve cost estimating of software intensive systems
- Proposed software measures
  - Replaces existing DD Form 2630 (4 pages)
  - Contained on two pages ~40 data elements
  - Based on SEI recommended core measures
    - » Size
    - » Effort
    - » Schedule
    - » Quality
- Only requesting initial “estimates-at-complete” and final “as-built” reports for each release

# *Proposal Overview (Concluded)*

- Report scope
  - All weapon system contracts within Acquisition Category (ACAT) IC and ID with software content which is expected to exceed \$40 million (FY 96\$)
    - » Commercial developers and government development agencies
  - Government cost and PM representatives determine WBS elements for which data is desired (Software Measurement Plan)
  - Developers propose how intent will be satisfied using existing data
  - Applicable for each software release
- Report frequency
  - 180 days prior to a major milestone decision (PM submits DD Form 2630-1)
  - 60 days after contract award or Memorandum of Understanding (MOU) (Developing organization submits DD Form 2630-2)
  - With each software release and final delivery (Developing organization submits DD Form 2630-3)

# *Software Measurement Pilot Tests*

- Conducted three types of pilot projects
  - Informational interviews with developers of on-going programs (2)
  - Collect data of on-going MAIS programs (8)
  - Try entire process on new programs (3)
- Pilot test results
  - Data sought are readily available
  - All collect these type of data to manage programs
  - Developers believe proposal is manageable provided report is tailored ~ 100 hours/report
  - Obtain developer comments prior to final RFP
  - Allow developers to document ground rules, assumptions, and special circumstances that explain data
  - Allow government PMs to request SPDR and oversight data under unified reporting requirement (not feasible)
  - Concerned about use of data
    - » Requirements, code, effort, and schedule growth
    - » Defects remaining at product delivery -- perception of a “black eye”

# *Status Report and Next Steps*

- Status
  - Developed proposal and proposed planning process
  - Coordinated with government and industry
  - Conducted pilot tests and modified proposal
  - Eliminated MAIS (ACAT IA) programs from scope
    - » PA&E decided it needed more time to fully coordinate with C<sup>3</sup>I
    - » MAIS programs may be included at a later date
  - Developed and submitted proposed change to DoD 5000, contracting language, DD Forms, DID and CDRL
- Next Steps
  - Incorporate written comments from NDIA and AIAA
  - Finalize DID
  - Obtain formal concurrence from services
  - Expect approval in April 2002

# *Web Site and Contact Information*

- Proposal and forms can be found on the public CCDR web site
  - <http://ccdr.pae.osd.mil/>
  - click on Software and then Metrics in left frame
- Points of contact
  - Tom Coonce
  - Cost Analysis Improvement Group
  - 703-697-3845
  - [Tom.Coonce@osd.pentagon.mil](mailto:Tom.Coonce@osd.pentagon.mil)
  - Contractor support:
    - John Bailey
    - Institute for Defense Analyses
    - 703-845-2534
    - [Jbailey@ida.org](mailto:Jbailey@ida.org)

# *Where We Are Today*

- Launched in directions that are fruitful and achievable.
  - Benefits include:
    - » Reduced research time
    - » Increased data sources
  - Committed to continuous re-engineering
- Some weaknesses in current execution
  - Validation effort
  - Visibility to systems commands and program offices
  - Monitoring compliance
- Other Challenges
  - Resource constraints
  - Technical risk

*“There are things known,  
and there are things unknown.  
And in between are the doors.”*

*Jim Morrison*

**DACIMS is one of those doors....**

**DACIMS - Enhancing DoD Cost Analysis**

# *System Demonstration*

**For additional information contact:**  
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